We claim:

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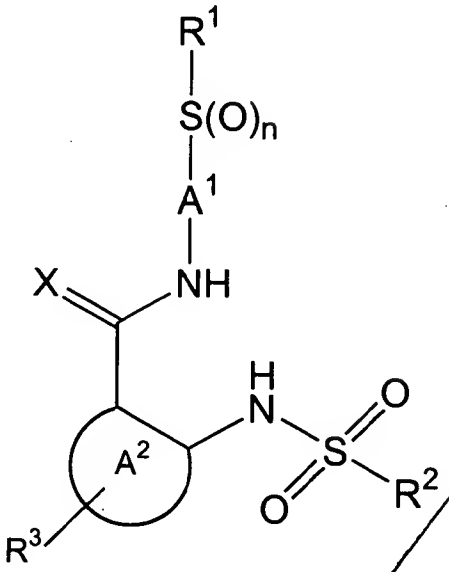
1. A compound of formula I, a stereoisomeric form thereof, or a physiologically acceptable salt thereof:



I

wherein

A^1 is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C_1-C_5)-alkyl, phenyl, tolyl, CF_3, NO_2, OH, -O-(C_1-C_5)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_3)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_3)-alkyl, -N$((C_1-C_3)$-alkyl$)_2$, -NH-CHO, -NH-CO-(C_1-C_5)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N$((C_1-C_3)$-alkyl$)_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, CHO, -CO-(C_1-C_5)-alkyl, -$S(O)_n$-(C_1-C_4)-alkyl, -$S(O)_n$-phenyl, and -$S(O)_n$-tolyl;

A^2, which comprises the two carbon atoms bonded to the groups C(=X)-NH- and NH-SO_2R^2, is a benzene ring,

contd. B2

a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to 7-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, or

a saturated or partially unsaturated or aromatic bicyclic 8-membered to 10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

R^1, when n in the group R^1-$S(O)_n$- is 0, is aryl, heterocyclyl, or (C_1-C_{18})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or is -CN, or

when n in the group R^1-$S(O)_n$- is 1, R^1 is aryl, heterocyclyl, or (C_1-C_{18})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or

when n in the group R^1-$S(O)_n$- is 2, R^1 is aryl, heterocyclyl, or (C_1-C_{18})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or R^1 is NR^5R^6;

R^2 is aryl, heterocyclyl, NR^5R^6, or (C_1-C_{10})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4;

R^3 is one or more identical or different residues chosen from hydrogen,

contd B2

halogen, CF_3, OH, -O-(C_1-C_7)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, (C_1-C_2)-alkylenedioxy, NO_2, -CN, NR^7R^8, -CO-NR^7R^8, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, -S(O)$_n$-(C_1-C_5)-alkyl, and (C_1-C_5)-alkyl

which is unsubstituted or substituted by one or more identical or different residues R^4;

R^4 is fluorine, OH, -O-(C_1-C_{10})-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, -CN, NR^7R^8, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, or oxo;

R^5 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

R^6 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted

by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

or R^5 and R^6 together with the nitrogen atom to which they are bonded form a

5-membered to 8-membered saturated or partially unsaturated ring,

contd. B2

wherein said ring optionally further comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and

wherein said ring is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, $(C_1$-$C_5)$-alkyl, hydroxy-$(C_1$-$C_3)$-alkyl-, -$(C_1$-$C_3)$-alkyl-O-$(C_1$-$C_4)$-alkyl, aryl, CF_3, OH, -O-$(C_1$-$C_7)$-alkyl, -O-aryl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_7)$-alkyl, $(C_2$-$C_3)$-alkylenedioxy, NR^7R^8, -CN, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, -CO-O-$(C_1$-$C_5)$-alkyl, CHO, -CO-$(C_1$-$C_5)$-alkyl, -$S(O)_n$-$(C_1$-$C_4)$-alkyl, -$S(O)_n$-NH_2, -$S(O)_n$-NH-$(C_1$-$C_3)$-alkyl, -$S(O)_n$-N$((C_1$-$C_3)$-alkyl$)_2$, oxo, -$(CH_2)_m$-NH_2, -$(CH_2)_m$-NH-$(C_1$-$C_4)$-alkyl, and -$(CH_2)_m$-N$((C_1$-$C_4)$-alkyl$)_2$ where in the substituent -$(CH_2)_m$-N$((C_1$-$C_4)$-alkyl$)_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, which optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

R^7 is hydrogen or $(C_1$-$C_7)$-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from OH, -O-$(C_1$-$C_5)$-alkyl, NH_2, -NH-$(C_1$-$C_4)$-alkyl, and -N$((C_1$-$C_4)$-alkyl$)_2$ where in the substituent N$((C_1$-$C_4)$-alkyl$)_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, wherein said ring optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

R^8 is hydrogen, -CO-$(C_1$-$C_4)$-alkyl, or $(C_1$-$C_7)$-alkyl which is unsubstituted or substituted

contd B2

by one or more identical or different substituents chosen from OH, -O-(C_1-C_5)-alkyl, NH_2, -NH-(C_1-C_4)-alkyl, and -N((C_1-C_4)-alkyl)$_2$ where in the substituent N((C_1-C_4)-alkyl)$_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR^5 as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C_1-C_5)-alkyl, phenyl, tolyl, CF_3, -O-CF_3, NO_2, OH, -O-(C_1-C_5)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_3)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_3)-alkyl, -N((C_1-C_3)-alkyl)$_2$, -NH-CHO, -NH-CO-(C_1-C_5)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, CHO, -CO-(C_1-C_5)-alkyl, -S(O)$_n$-(C_1-C_4)-alkyl, -S(O)$_n$-phenyl, and -S(O)$_n$-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine,

contd. B2

$(C_1$-$C_5)$-alkyl, OH, -O-$(C_1$-$C_5)$-alkyl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_3)$-alkyl, NH_2, -NH-$(C_1$-$C_3)$-alkyl, -N$((C_1$-$C_3)$-alkyl$)_2$, -CN, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, and -CO-O-$(C_1$-$C_5)$-alkyl;

n is 0, 1, or 2;

m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring carbon atom in the group A^1 which ring carbon atom is directly adjacent to the carbon atom in A^1 bonded to the group -NH-C(=X)- so that the group -NH-C(=X)- together with the carbon atoms in A^1 bonded to it forms an anellated imidazole ring;

excluding the compound of formula I wherein simultaneously

A^2 is a benzene ring which is substituted in positions 3 and 5 by chlorine,

R^2 is methyl, X is oxygen, and R^1-$S(O)_n$-A^1- is a

5-chloro-2-(4-chlorophenylmercapto)-phenyl residue.

2. The compound of the formula I as claimed in claim 1, wherein A^1 is a phenylene residue or a 5-membered or 6-membered heteroarylene residue, wherein said residues are unsubstituted or substituted as set forth in claim 1.

3. The compound of the formula I as claimed in claim 1, wherein A^2 is an aromatic ring.

4. The compound of the formula I as claimed in claim 1, wherein X is oxygen.

5. The compound of the formula I as claimed in claim 1, wherein R^2 is aryl and is unsubstituted or substituted as set forth in claim 1.

6. The compound of the formula I as claimed in claim 1, wherein R^1 is $(C_1\text{-}C_7)$-alkyl, aryl, or NR^5R^6, and is unsubstituted or substituted as set forth in claim 1.

7. The compound of the formula I as claimed in claim 1, wherein R^1 is NR^5R^6 and R^5 and R^6 independently of one another are hydrogen, $(C_1\text{-}C_9)$-alkyl, $(C_1\text{-}C_4)$-alkyl-O-$(C_1\text{-}C_3)$-alkyl-, or 5-membered or 6-membered aryl or R^5 and R^6 together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered heterocycle which optionally further comprises an additional ring heteroatom chosen from nitrogen, oxygen, and sulfur, wherein said heterocycle is unsubstituted or substituted by one or more identical or different residues chosen from $(C_1\text{-}C_3)$-alkyl, hydroxy-$(C_1\text{-}C_3)$-alkyl-, 5-membered or 6-membered aryl, carbamoyl, hydroxy, and oxo.

8. The compound of the formula I as claimed in claim 1, wherein

A^1 is phenylene or heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, $(C_1$-$C_4)$-alkyl, CF_3, -O-$(C_1$-$C_4)$-alkyl, and -CN;

A^2 is an aromatic ring;

R^1, when n in the group R^1-$S(O)_n$- is 1, is $(C_1$-$C_7)$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or R^1 is aryl, or when n in the group R^1-$S(O)_n$- is 2, R^1 is aryl, or $(C_1$-$C_7)$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or R^1 is NR^5R^6;

R^2 is aryl;

R^3 is one or more identical or different residues chosen from hydrogen, halogen, CF_3, OH, -O-$(C_1$-$C_4)$-alkyl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_4)$-alkyl, -O-aryl, NO_2, -CN, NR^7R^8, -CO-NR^7R^8, -CO-OH, -CO-O-$(C_1$-$C_4)$-alkyl, heterocyclyl, -$S(O)_n$-$(C_1$-$C_4)$-alkyl, and $(C_1$-$C_4)$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4;

R^4 is fluorine, OH, -O-$(C_1$-$C_{10})$-alkyl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_7)$-alkyl, -O-aryl, -CN, NR^7R^8, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, -CO-O-$(C_1$-$C_4)$-alkyl, heterocyclyl, or oxo;

R^5 and R^6 independently of one another are hydrogen, $(C_1$-$C_9)$-alkyl, $(C_1$-$C_4)$-alkyl-O-$(C_1$-$C_3)$-alkyl-, or aryl, or

R^5 and R^6 together with the nitrogen to which they are bonded form a 5-membered, 6-membered, or 7-membered heterocycle, wherein said heterocycle optionally further comprises an additional ring heteroatom chosen from nitrogen, oxygen, and sulfur, and wherein said heterocycle is unsubstituted or substituted by one or more identical or different residues chosen from $(C_1$-$C_3)$-alkyl, hydroxy-$(C_1$-$C_3)$-alkyl-, aryl, carbamoyl, hydroxy, and oxo;

R^7 is hydrogen, $(C_1$-$C_3)$-alkyl, $((C_1$-$C_4)$-alkyl$)_2$N-$(C_1$-$C_3)$-alkyl-, or $(C_1$-$C_4)$-alkyl-O-$(C_1$-$C_3)$-alkyl-;

R^8 is hydrogen, $(C_1$-$C_3)$-alkyl, or acetyl;

aryl is phenyl or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, $(C_1$-$C_4)$-alkyl, phenyl, CF_3, NO_2, -O-$(C_1$-$C_4)$-alkyl, $(C_1$-$C_2)$-alkylenedioxy, NH_2, -NH-CO-$(C_1$-$C_4)$-alkyl, -CN, -CO-NH_2, -CO-OH, and -CO-O-$(C_1$-$C_4)$-alkyl;

heteroaryl and heteroarylene are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle which comprises one or more identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic 5-membered or 6-membered saturated heterocycle which comprises one or more identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, $(C_1$-$C_4)$-alkyl, OH, -O-$(C_1$-$C_4)$-alkyl, NH_2, -CN, -CO-NH_2, -CO-OH, and -CO-O-$(C_1$-$C_4)$-alkyl;

n is 0, 1, or 2; and

X is oxygen.

9. The compound of the formula I as claimed in claim 1, wherein

A^1 is phenylene which is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, $(C_1$-$C_4)$-alkyl, CF_3, -O-$(C_1$-$C_4)$-alkyl, and -CN;

A^2 is a benzene ring;

R^1 is NR^5R^6;

R^2 is aryl;

R^3 is one or more identical or different residues chosen from hydrogen, halogen, CF_3, -O-$(C_1$-$C_4)$-alkyl, -CN, and $(C_1$-$C_4)$-alkyl;

R^5 and R^6 together with the nitrogen atom to which they are bonded form a 5-membered or 6-membered saturated heterocycle, wherein said heterocycle optionally further comprises an additional ring heteroatom chosen from nitrogen, oxygen, and sulfur, and said heterocycle is unsubstituted or substituted by one or more identical or different residues chosen from $(C_1$-$C_3)$-alkyl, hydroxy-$(C_1$-$C_3)$-alkyl-, aryl, carbamoyl, hydroxy, and oxo;

aryl is phenyl or 5-membered or 6-membered heteroaryl comprising one or more identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and is unsubstituted or substituted by one or more identical or different substituents

chosen from halogen, $(C_1$-$C_4)$-alkyl, CF_3, NO_2, -O-$(C_1$-$C_4)$-alkyl, -NH-CO-$(C_1$-$C_4)$-alkyl, and -CN;

n is 2; and

X is oxygen.

10. The compound of the formula I as claimed in claim 1, wherein

A^1 is an unsubstituted divalent phenylene residue;

A^2 is a benzene ring;

R^1 is NR^5R^6;

R^2 is aryl;

R^3 is one or more identical or different residues chosen from hydrogen, halogen, -O-$(C_1$-$C_4)$-alkyl, and $(C_1$-$C_4)$-alkyl;

R^5 and R^6 together with the nitrogen atom to which they are bonded form a saturated 6-membered heterocycle which optionally further comprises an additional ring heteroatom chosen from nitrogen, oxygen, and sulfur, said heterocycle is unsubstituted or substituted by one or more identical or different residues chosen from $(C_1$-$C_3)$-alkyl, aryl, oxo and carbamoyl;

aryl is phenyl or 5-membered or 6-membered heteroaryl comprising one or more identical or different ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, $(C_1$-$C_4)$-alkyl, CF_3, and -O-$(C_1$-$C_4)$-alkyl;

n is 2; and

X is oxygen.

11. The compound of the formula I as claimed in claim 1, wherein

A^1 is an unsubstituted divalent 1,4-phenylene residue;

A^2, together with the residues R^3, is a benzene ring which is substituted with one or two identical or different substituents chosen from chlorine and methoxy;

R^1 is NR^5R^6;

R^2 is phenyl or thienyl, and is substituted by one or two chlorine atoms;

R^5 and R^6 together with the nitrogen atom to which they are bonded form a saturated 6-membered heterocycle which optionally further comprises an additional ring heteroatom chosen from oxygen and sulfur, and which is unsubstituted or substituted by one or two methyl residues;

n is 2; and

X is oxygen.

12. The compound of the formula I as claimed in claim 1, wherein said compound is chosen from:

2-(4-Chloro-phenylsulfonylamino)-4,5-dimethoxy-N-(4-(thiomorpholine-4-sulfonyl)-phenyl)-benzamide;

2-(4-Chloro-phenylsulfonylamino)-N-(4-(cis-2,6-dimethyl-morpholine-4-sulfonyl)-phenyl)-4,5-dimethoxy-benzamide;

5-Chloro-2-(5-chloro-thiophene-2-sulfonylamino)-N-(4-(morpholine-4-sulfonyl)-phenyl)-benzamide;

and pharmaceutically acceptable salts of any of the foregoing.

13. The compound of the formula I as claimed in claim 12, wherein said pharmaceutically acceptable salts are sodium salts.

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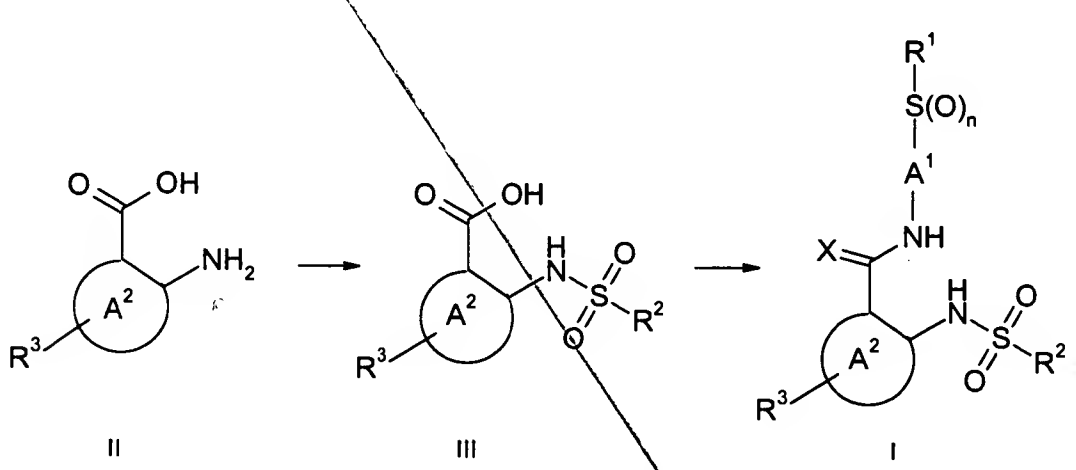
14. A method for preparing a compound of formula I, comprising:

converting a cyclic aminocarboxylic acid compound of formula II into a sulfonylaminocarboxylic acid compound of formula III; and

converting the sulfonylaminocarboxylic acid compound of formula III into a compound of formula I:



II III I

wherein, in the compounds of formulae I, II, and III:

A^1 is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, $(C_1$-$C_5)$-alkyl, phenyl, tolyl, CF_3, NO_2, OH, -O-$(C_1$-$C_5)$-alkyl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_3)$-alkyl, $(C_1$-$C_2)$-alkylenedioxy, NH_2, -NH-$(C_1$-$C_3)$-alkyl, -N$((C_1$-$C_3)$-alkyl$)_2$, -NH-CHO, -NH-CO-$(C_1$-$C_5)$-alkyl, -CN, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, -CO-O-$(C_1$-$C_5)$-alkyl, heterocyclyl, CHO, -CO-$(C_1$-$C_5)$-alkyl, -S(O)$_n$-$(C_1$-$C_4)$-alkyl, -S(O)$_n$-phenyl, and -S(O)$_n$-tolyl;

A^2, which comprises the two carbon atoms bonded to the groups C(=X)-NH- and

contd. B3

$NH\text{-}SO_2R^2$, is a benzene ring,

a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to 7-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, or

a saturated or partially unsaturated or aromatic bicyclic 8-membered to 10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

R^1, when n in the group $R^1\text{-}S(O)_n$- is 0, is aryl, heterocyclyl, or $(C_1\text{-}C_{18})$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or is -CN, or

when n in the group $R^1\text{-}S(O)_n$- is 1, R^1 is aryl, heterocyclyl, or $(C_1\text{-}C_{18})$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or

when n in the group $R^1\text{-}S(O)_n$- is 2, R^1 is aryl, heterocyclyl, or $(C_1\text{-}C_{18})$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or R^1 is NR^5R^6;

R^2 is aryl, heterocyclyl, NR^5R^6, or $(C_1\text{-}C_{10})$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4;

R^3 is one or more identical or different residues chosen from hydrogen,

contd B3

halogen, CF_3, OH, -O-(C_1-C_7)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, (C_1-C_2)-alkylenedioxy, NO_2, -CN, NR^7R^8, -CO-NR^7R^8, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, -S(O)$_n$-(C_1-C_5)-alkyl, and (C_1-C_5)-alkyl

which is unsubstituted or substituted by one or more identical or different residues R^4;

R^4 is fluorine, OH, -O-(C_1-C_{10})-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, -CN, NR^7R^8, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, or oxo;

R^5 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

R^6 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted

by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

or R^5 and R^6 together with the nitrogen atom to which they are bonded form a

5-membered to 8-membered saturated or partially unsaturated ring,

contd B3

wherein said ring optionally further comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and

wherein said ring is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, (C_1-C_5)-alkyl, hydroxy-(C_1-C_3)-alkyl-, -(C_1-C_3)-alkyl-O-(C_1-C_4)-alkyl, aryl, CF_3, OH, -O-(C_1-C_7)-alkyl, -O-aryl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, (C_2-C_3)-alkylenedioxy, NR^7R^8, -CN, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, CHO, -CO-(C_1-C_5)-alkyl, -$S(O)_n$-(C_1-C_4)-alkyl, -$S(O)_n$-NH_2, -$S(O)_n$-NH-(C_1-C_3)-alkyl, -$S(O)_n$-N((C_1-C_3)-alkyl)$_2$, oxo, -$(CH_2)_m$-NH_2, -$(CH_2)_m$-NH-(C_1-C_4)-alkyl, and -$(CH_2)_m$-N((C_1-C_4)-alkyl)$_2$ where in the substituent -$(CH_2)_m$-N((C_1-C_4)-alkyl)$_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, which optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

R^7 is hydrogen or (C_1-C_7)-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from OH, -O-(C_1-C_5)-alkyl, NH_2, -NH-(C_1-C_4)-alkyl, and -N((C_1-C_4)-alkyl)$_2$ where in the substituent N((C_1-C_4)-alkyl)$_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, wherein said ring optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

R^8 is hydrogen, -CO-(C_1-C_4)-alkyl, or (C_1-C_7)-alkyl which is unsubstituted or substituted

contd. B3

by one or more identical or different substituents chosen from OH, -O-(C_1-C_5)-alkyl, NH_2, -NH-(C_1-C_4)-alkyl, and -N((C_1-C_4)-alkyl)$_2$ where in the substituent N((C_1-C_4)-alkyl)$_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR^5 as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C_1-C_5)-alkyl, phenyl, tolyl, CF_3, -O-CF_3, NO_2, OH, -O-(C_1-C_5)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_3)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_3)-alkyl, -N((C_1-C_3)-alkyl)$_2$, -NH-CHO, -NH-CO-(C_1-C_5)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, CHO, -CO-(C_1-C_5)-alkyl, -S(O)$_n$-(C_1-C_4)-alkyl, -S(O)$_n$-phenyl, and -S(O)$_n$-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine,

contd. B3

$(C_1$-$C_5)$-alkyl, OH, -O-$(C_1$-$C_5)$-alkyl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_3)$-alkyl, NH_2, -NH-$(C_1$-$C_3)$-alkyl, -N$((C_1$-$C_3)$-alkyl$)_2$, -CN, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, and -CO-O-$(C_1$-$C_5)$-alkyl;

n is 0, 1, or 2;

m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring carbon atom in the group A^1 which ring carbon atom is directly adjacent to the carbon atom in A^1 bonded to the group -NH-C(=X)- so that the group -NH-C(=X)- together with the carbon atoms in A^1 bonded to it forms an anellated imidazole ring;

or when one or more of said residues, independent of each other, are present in protected form or in a form of precursor groups.

contd. B3

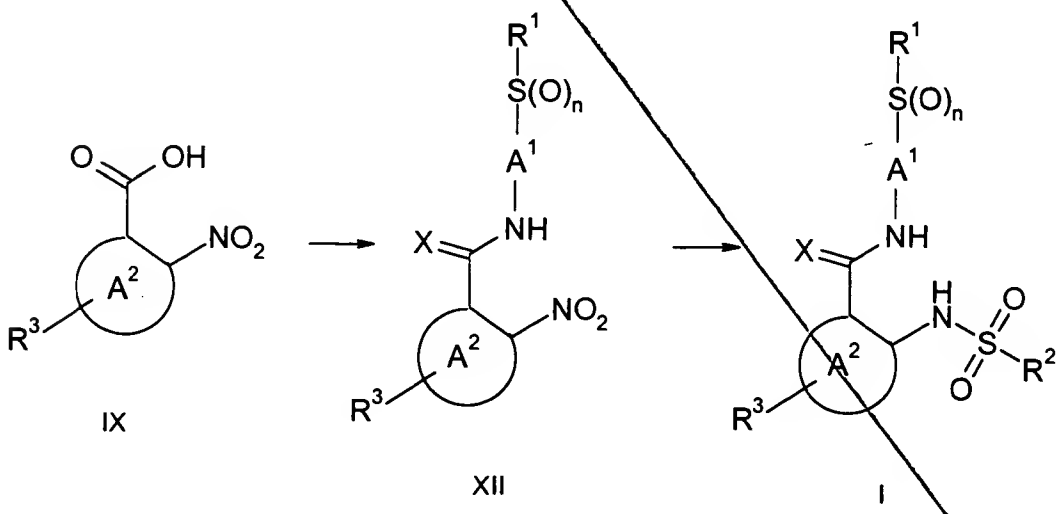
15. A method for preparing a compound of formula I, comprising:

converting a cyclic nitrocarboxylic acid compound of formula IX into a nitrocarboxamide compound of formula XII; and

converting the nitrocarboxamide compound of the formula XII into a compound of formula I by

reducing the nitro group to an amino group, and

sulfonylating the amino group:



IX XII I

wherein, in the compounds of formulae IX, XII, and I:

A^1 is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, $(C_1\text{-}C_5)$-alkyl, phenyl, tolyl, CF_3, NO_2, OH, -O-$(C_1\text{-}C_5)$-alkyl, -O-$(C_2\text{-}C_4)$-alkyl-O-$(C_1\text{-}C_3)$-alkyl, $(C_1\text{-}C_2)$-alkylenedioxy, NH_2, -NH-$(C_1\text{-}C_3)$-alkyl, -N$((C_1\text{-}C_3)\text{-alkyl})_2$, -NH-CHO, -NH-CO-$(C_1\text{-}C_5)$-alkyl, -CN, -CO-$NH_2$, -CO-NH-$(C_1\text{-}C_3)$-

contd. B3

alkyl, -CO-N($(C_1$-$C_3)$-alkyl)$_2$, -CO-OH, -CO-O-$(C_1$-$C_5)$-alkyl, heterocyclyl, CHO, -CO-$(C_1$-$C_5)$-alkyl, -S(O)$_n$-$(C_1$-$C_4)$-alkyl, -S(O)$_n$-phenyl, and -S(O)$_n$-tolyl;

A^2, which comprises the two carbon atoms bonded to the groups C(=X)-NH- and NH-SO_2R^2, is a benzene ring,

a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to 7-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, or

a saturated or partially unsaturated or aromatic bicyclic 8-membered to 10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

R^1, when n in the group R^1-S(O)$_n$- is 0, is aryl, heterocyclyl, or $(C_1$-$C_{18})$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or is -CN, or

when n in the group R^1-S(O)$_n$- is 1, R^1 is aryl, heterocyclyl, or $(C_1$-$C_{18})$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or

when n in the group R^1-S(O)$_n$- is 2, R^1 is aryl, heterocyclyl, or $(C_1$-$C_{18})$-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or R^1 is NR^5R^6;

R^2 is aryl, heterocyclyl, NR^5R^6, or $(C_1$-$C_{10})$-alkyl which is unsubstituted or substituted by

contd. B3

one or more identical or different residues R^4;

R^3 is one or more identical or different residues chosen from hydrogen, halogen, CF_3, OH, -O-(C_1-C_7)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, (C_1-C_2)-alkylenedioxy, NO_2, -CN, NR^7R^8, -CO-NR^7R^8, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, -$S(O)_n$-(C_1-C_5)-alkyl, and (C_1-C_5)-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4;

R^4 is fluorine, OH, -O-(C_1-C_{10})-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, -CN, NR^7R^8, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, or oxo;

R^5 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from R^4 and aryl, or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

R^6 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from R^4 and aryl, or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

or R^5 and R^6 together with the nitrogen atom to which they are bonded form a

contd. B3

5-membered to 8-membered saturated or partially unsaturated ring,

wherein said ring optionally further comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and

wherein said ring is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, $(C_1$-$C_5)$-alkyl, hydroxy-$(C_1$-$C_3)$-alkyl-, -$(C_1$-$C_3)$-alkyl-O-$(C_1$-$C_4)$-alkyl, aryl, CF_3, OH, -O-$(C_1$-$C_7)$-alkyl, -O-aryl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_7)$-alkyl, $(C_2$-$C_3)$-alkylenedioxy, NR^7R^8, -CN, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, -CO-O-$(C_1$-$C_5)$-alkyl, CHO, -CO-$(C_1$-$C_5)$-alkyl, -S(O)$_n$-$(C_1$-$C_4)$-alkyl, -S(O)$_n$-NH_2, -S(O)$_n$-NH-$(C_1$-$C_3)$-alkyl, -S(O)$_n$-N$((C_1$-$C_3)$-alkyl$)_2$, oxo, -$(CH_2)_m$-NH_2, -$(CH_2)_m$-NH-$(C_1$-$C_4)$-alkyl, and -$(CH_2)_m$-N$((C_1$-$C_4)$-alkyl$)_2$ where in the substituent -$(CH_2)_m$-N$((C_1$-$C_4)$-alkyl$)_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, which optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

R^7 is hydrogen or $(C_1$-$C_7)$-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from OH, -O-$(C_1$-$C_5)$-alkyl, NH_2, -NH-$(C_1$-$C_4)$-alkyl, and -N$((C_1$-$C_4)$-alkyl$)_2$ where in the substituent N$((C_1$-$C_4)$-alkyl$)_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, wherein said ring optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

contd. B3

R^8 is hydrogen, -CO-(C_1-C_4)-alkyl, or (C_1-C_7)-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from OH, -O-(C_1-C_5)-alkyl, NH_2, -NH-(C_1-C_4)-alkyl, and -N((C_1-C_4)-alkyl)$_2$ where in the substituent N((C_1-C_4)-alkyl)$_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR^5 as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C_1-C_5)-alkyl, phenyl, tolyl, CF_3, -O-CF_3, NO_2, OH, -O-(C_1-C_5)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_3)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_3)-alkyl, -N((C_1-C_3)-alkyl)$_2$, -NH-CHO, -NH-CO-(C_1-C_5)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, CHO, -CO-(C_1-C_5)-alkyl, -S(O)$_n$-(C_1-C_4)-alkyl, -S(O)$_n$-phenyl, and -S(O)$_n$-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted

contd. B3

or substituted by one or more identical or different substituents chosen from fluorine, (C_1-C_5)-alkyl, OH, -O-(C_1-C_5)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_3)-alkyl, NH_2, -NH-(C_1-C_3)-alkyl, -N$((C_1-C_3)$-alkyl$)_2$, -CN, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N$((C_1-C_3)$-alkyl$)_2$, -CO-OH, and -CO-O-(C_1-C_5)-alkyl;

n is 0, 1, or 2;

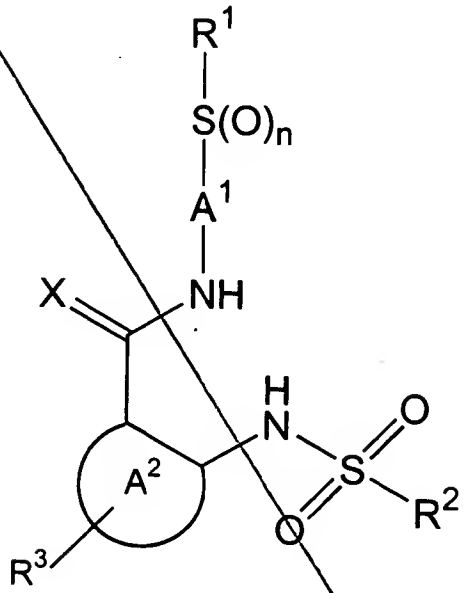
m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring carbon atom in the group A^1 which ring carbon atom is directly adjacent to the carbon atom in A^1 bonded to the group -NH-C(=X)- so that the group -NH-C(=X)- together with the carbon atoms in A^1 bonded to it forms an anellated imidazole ring;

or when one or more of said residues, independent of each other, are present in protected form or in a form of precursor groups.

contd. B3

16. A composition, comprising a compound of formula I:



I

wherein

A^1 is a divalent residue chosen from phenylene, naphthylene, and heteroarylene, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C_1-C_5)-alkyl, phenyl, tolyl, CF_3, NO_2, OH, -O-(C_1-C_5)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_3)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_3)-alkyl, -N$((C_1-C_3)\text{-alkyl})_2$, -NH-CHO, -NH-CO-$(C_1-C_5)$-alkyl, -CN, -CO-$NH_2$, -CO-NH-$(C_1-C_3)$-alkyl, -CO-N$((C_1-C_3)\text{-alkyl})_2$, -CO-OH, -CO-O-$(C_1-C_5)$-alkyl, heterocyclyl, CHO, -CO-(C_1-C_5)-alkyl, -S(O)$_n$-(C_1-C_4)-alkyl, -S(O)$_n$-phenyl, and -S(O)$_n$-tolyl;

A^2, which comprises the two carbon atoms bonded to the groups C(=X)-NH- and $NH\text{-}SO_2R^2$, is a benzene ring,

contd. B3

a naphthalene ring,

a saturated or partially unsaturated 3-membered to 7-membered carbocycle,

a saturated or partially unsaturated or aromatic monocyclic 5-membered to 7-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, or

a saturated or partially unsaturated or aromatic bicyclic 8-membered to 10-membered heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

R^1, when n in the group R^1-$S(O)_n$- is 0, is aryl, heterocyclyl, or (C_1-C_{18})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or is -CN, or

when n in the group R^1-$S(O)_n$- is 1, R^1 is aryl, heterocyclyl, or (C_1-C_{18})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or

when n in the group R^1-$S(O)_n$- is 2, R^1 is aryl, heterocyclyl, or (C_1-C_{18})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4, or R^1 is NR^5R^6;

R^2 is aryl, heterocyclyl, NR^5R^6, or (C_1-C_{10})-alkyl which is unsubstituted or substituted by one or more identical or different residues R^4;

R^3 is one or more identical or different residues chosen from hydrogen,

contd. B3

halogen, CF_3, OH, -O-(C_1-C_7)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, (C_1-C_2)-alkylenedioxy, NO_2, -CN, NR^7R^8, -CO-NR^7R^8, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, -S(O)$_n$-(C_1-C_5)-alkyl, and (C_1-C_5)-alkyl

which is unsubstituted or substituted by one or more identical or different residues R^4;

R^4 is fluorine, OH, -O-(C_1-C_{10})-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_7)-alkyl, -O-aryl, -CN, NR^7R^8, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, or oxo;

R^5 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

R^6 is hydrogen, (C_1-C_{10})-alkyl which is unsubstituted or substituted

by one or more identical or different substituents chosen from R^4 and aryl,

or is aryl, heterocyclyl, -CO-NR^7R^8, -CO-aryl, or -CO-(C_1-C_{10})-alkyl wherein the alkyl residue is unsubstituted or substituted by one or more identical or different residues R^4;

or R^5 and R^6 together with the nitrogen atom to which they are bonded form a

5-membered to 8-membered saturated or partially unsaturated ring,

contd B3

wherein said ring optionally further comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and

wherein said ring is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine, $(C_1$-$C_5)$-alkyl, hydroxy-$(C_1$-$C_3)$-alkyl-, -$(C_1$-$C_3)$-alkyl-O-$(C_1$-$C_4)$-alkyl, aryl, CF_3, OH, -O-$(C_1$-$C_7)$-alkyl, -O-aryl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_7)$-alkyl, $(C_2$-$C_3)$-alkylenedioxy, NR^7R^8, -CN, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, -CO-O-$(C_1$-$C_5)$-alkyl, CHO, -CO-$(C_1$-$C_5)$-alkyl, -$S(O)_n$-$(C_1$-$C_4)$-alkyl, -$S(O)_n$-NH_2, -$S(O)_n$-NH-$(C_1$-$C_3)$-alkyl, -$S(O)_n$-N$((C_1$-$C_3)$-alkyl$)_2$, oxo, -$(CH_2)_m$-NH_2, -$(CH_2)_m$-NH-$(C_1$-$C_4)$-alkyl, and -$(CH_2)_m$-N$((C_1$-$C_4)$-alkyl$)_2$ where in the substituent -$(CH_2)_m$-N$((C_1$-$C_4)$-alkyl$)_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, which optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

R^7 is hydrogen or $(C_1$-$C_7)$-alkyl which is unsubstituted or substituted by one or more identical or different substituents chosen from OH, -O-$(C_1$-$C_5)$-alkyl, NH_2, -NH-$(C_1$-$C_4)$-alkyl, and -N$((C_1$-$C_4)$-alkyl$)_2$ where in the substituent N$((C_1$-$C_4)$-alkyl$)_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring, wherein said ring optionally further comprises an oxygen atom, sulfur atom, or a group NR^5 as a ring member;

R^8 is hydrogen, -CO-$(C_1$-$C_4)$-alkyl, or $(C_1$-$C_7)$-alkyl which is unsubstituted or substituted

contd B3

by one or more identical or different substituents chosen from OH, -O-(C_1-C_5)-alkyl, NH_2, -NH-(C_1-C_4)-alkyl, and -N((C_1-C_4)-alkyl)$_2$ where in the substituent N((C_1-C_4)-alkyl)$_2$ the two alkyl groups are independent, identical or different, or are connected by a single bond and together with the nitrogen atom to which they are bonded form a 5-membered to 7-membered ring which optionally further comprises an oxygen atom, a sulfur atom, or a group NR^5 as ring member;

aryl is phenyl, naphthyl, or heteroaryl, and is unsubstituted or substituted by one or more identical or different substituents chosen from halogen, (C_1-C_5)-alkyl, phenyl, tolyl, CF_3, -O-CF_3, NO_2, OH, -O-(C_1-C_5)-alkyl, -O-(C_2-C_4)-alkyl-O-(C_1-C_3)-alkyl, (C_1-C_2)-alkylenedioxy, NH_2, -NH-(C_1-C_3)-alkyl, -N((C_1-C_3)-alkyl)$_2$, -NH-CHO, -NH-CO-(C_1-C_5)-alkyl, -CN, -CO-NH_2, -CO-NH-(C_1-C_3)-alkyl, -CO-N((C_1-C_3)-alkyl)$_2$, -CO-OH, -CO-O-(C_1-C_5)-alkyl, heterocyclyl, CHO, -CO-(C_1-C_5)-alkyl, -S(O)$_n$-(C_1-C_4)-alkyl, -S(O)$_n$-phenyl, and -S(O)$_n$-tolyl;

heteroaryl and heteroarylene, independently of each other, are a residue of a monocyclic 5-membered or 6-membered aromatic heterocycle or of a bicyclic 8-membered to 10-membered aromatic heterocycle, wherein said heterocycles comprise one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur;

heterocyclyl is a residue of a monocyclic or polycyclic 5-membered to 11-membered saturated or partially unsaturated heterocycle which comprises one or more ring heteroatoms chosen from nitrogen, oxygen, and sulfur, and which is unsubstituted or substituted by one or more identical or different substituents chosen from fluorine,

contd. B3

$(C_1$-$C_5)$-alkyl, OH, -O-$(C_1$-$C_5)$-alkyl, -O-$(C_2$-$C_4)$-alkyl-O-$(C_1$-$C_3)$-alkyl, NH_2, -NH-$(C_1$-$C_3)$-alkyl, -N$((C_1$-$C_3)$-alkyl$)_2$, -CN, -CO-NH_2, -CO-NH-$(C_1$-$C_3)$-alkyl, -CO-N$((C_1$-$C_3)$-alkyl$)_2$, -CO-OH, and -CO-O-$(C_1$-$C_5)$-alkyl;

n is 0, 1, or 2;

m is 2, 3, or 4; and

X is oxygen or NH, or X is a nitrogen atom which via a single bond is attached to a ring carbon atom in the group A^1 which ring carbon atom is directly adjacent to the carbon atom in A^1 bonded to the group –NH-C(=X)- so that the group –NH-C(=X)- together with the carbon atoms in A^1 bonded to it forms an anellated imidazole ring;

or a stereoisomer thereof, or a physiologically acceptable salt thereof, or a mixture of two or more of any of the foregoing; and

a pharmaceutically acceptable carrier.

17. A composition useful for the treatment or prevention of cardiovascular diseases, endothelial dysfunction, diastolic dysfunction, atherosclerosis, hypertension, angina pectoris, thromboses, restenoses, myocardial infarction, strokes, cardiac insufficiency, pulmonary hypertonia, erectile dysfunction, asthma bronchiale, chronic kidney insufficiency, diabetes or cirrhosis of the liver, said composition comprising an amount efficacious for said treatment or prevention of a compound of formula I as claimed in claim 1, a stereoisomeric form thereof, or a physiologically acceptable salt thereof, or a mixture of two or more of any of the foregoing, and

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~~a pharmaceutically acceptable carrier.~~

18. A method for activating soluble guanylate cyclase, said method comprising the step of administering an amount efficacious therefor of a compound of formula I as claimed in claim 1, a stereoisomeric form thereof, a physiologically acceptable salt thereof, or a mixture of any two or more of the foregoing.

19. The method as claimed in claim 18, further comprising the step of diagnosing a disease.

20. The method as claimed in claim 18, wherein said administering is to a human or animal patient in need of such activating.

21. A method for treatment or prevention of cardiovascular diseases, endothelial dysfunction, diastolic dysfunction, atherosclerosis, hypertension, angina pectoris, thromboses, restenoses, myocardial infarction, strokes, cardiac insufficiency, pulmonary hypertonia, erectile dysfunction, asthma bronchiale, chronic kidney insufficiency, diabetes, or cirrhosis of the liver in a human or animal patient, said method comprising the step of administering to the patient an amount efficacious for said treatment or prevention of a compound of formula I as claimed in claim 1, a stereoisomeric form thereof, a physiologically acceptable salt thereof, or a mixture of any two or more of the foregoing.

22. A method for improving restricted memory performance or ability to learn in a human or animal patient, said method comprising the step of administering an amount efficacious therefor to the patient of a compound of formula I as claimed in claim 1, a stereoisomeric form thereof, a physiologically acceptable salt thereof, or a mixture of any two or more of the foregoing.